

## **First Island to Be Powered Solely by Wind and Water**

The smallest and least known of Spain's Canary Islands, El Hierro, is making a splash by becoming the first island in the world fully energy self-sufficient through combined water and wind power.

A wind farm opening at the end of June will turn the gusts that rake the steep cliffs and green mountains of the volcanic island into electricity. Five turbines installed at the northeastern tip of El Hierro near the capital Valverde will have a total output of 11.5 megawatts -- more than enough power to meet the demand of the island's roughly 10,000 residents and its energy-hungry water desalination plants.

Although other islands around the world are powered by solar or wind energy, experts say El Hierro is the first to secure a constant supply of electricity by combining wind and water power and with no connection to any outside electricity network.

The plant will account for 50 percent of the island's electricity demand when it is officially inaugurated at the end of June, a figure that will rise to 100 percent over the following months. The scheme will cut carbon dioxide emissions by 18,700 tons per year and eliminate the island's annual consumption of 40,000 barrels of oil.

El Hierro will maintain its fuel oil power station as a back up, just in case.

The island is cited as a pioneering project by IRENA, the international organization for renewable energy, and other experts such as Alain Gioda, a climate historian at France IRD science research institute.

"The true novelty of El Hierro is that technicians have managed, without being connected to any national network, to guarantee a stable production of electricity, that comes 100 percent from renewable energy, overcoming the intermittent nature of the wind," he said.

El Hierro's wind power plant has sparked interest from other islands seeking to follow its example. Officials from Aruba, Hawaii, Samsø in Denmark, Oki in Japan, and Indonesia have all shown interest.

The wind power plant cost 80 million euros (\$110 million) to build. The island authorities own 60 percent of the plant, with 30 percent held by Spanish energy company Endesa -- a subsidiary of Italian group Enel -- and 10 percent by a local technology institute. Revenues from the plant will boost the island's budget by about one to three million euros per year.

El Hierro, designated by UNESCO as a Biosphere Reserve with 60 percent of its territory of 278 square kilometers (107 square miles) protected to preserve its natural diversity, also hopes its green energy drive will draw visitors interested in nature and science.

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